



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,816	01/30/2004	Nobumasa Suzuki	03599.000093.	3133
5514 7590 05/08/2006 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER LUND, JEFFRIE ROBERT	
			ART UNIT	PAPER NUMBER

1763

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/766,816

Applicant(s)

SUZUKI, NOBUMASA

Examiner

Jeffrie R. Lund

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 1-6 is withdrawn in view of the newly discovered reference(s) to Karner et al, US Patent 5,616,373, and Suzuki, US Patent Application Publication 2006/0081183 A1. Rejections based on the newly cited reference(s) follow.

Information Disclosure Statement

2. The IDS filed April 26, 2006 citing a Korean Office action has been considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 requires that the object is closer to the gas introducing part than to the plasma generating region and between the gas introducing part and the plasma generating region. Claim 5 defines the gas introducing part as having a first and second inlet, and that the first inlet is located on the plasma generating region side of the conductance adjuster and the second inlet is on the object side of the gas conductance adjuster. It is not possible to meet both the limitations of claim 1 and claim 5 at the same time, specifically, it is not possible to have part of the gas introducing part on the plasma side of the conductance adjuster and have the object on the object side of the

Art Unit: 1763

conductance adjuster, and the object between the gas introducing part and the plasma generating region. The Examiner suggests making claim 5 independent without the limitation that the object is between the plasma generating region and the gas introducing part, or amending claim 5 such that there is a second gas introducing part located in the plasma side of the conductance adjuster, while the first gas introducing part i.e. gas introducing part meets the limits of claim 1.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Karner et al, US Patent 5,616,373.

Karner et al teaches a plasma processing chamber that includes: a process chamber 1 that accommodates an object 4 to be processed and generates plasma; a gas introducing part 15 for introducing gas into the process chamber; a mechanism 3a that arranges the object in the flow of the gas such that the object is (i) closer to the gas introducing part 15 than to a plasma generating region 23c and (ii) between the gas introducing part 15 and the plasma generating region 23c in the flow of the gas; and an exhaust mechanism 72, which is arranged closer to the plasma generating region 23c than to the object 4, for exhausting the gas; and a conductance adjuster 24 having a

Art Unit: 1763

plurality of holes 21c. (Figure 6) The specific plasma treatment is an intended use of the apparatus. Karner et al is capable of performing a plasma oxidation or nitridation.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karner et al, US Patent 5,616,373, in view of Sumitomo Metal Ind. LTD, JP 6-196420.

Karner et al was discussed above and includes a first gas inlet 68 located in the plasma side of the conductance adjuster and a second gas inlet 7 located in the object side of the conductance adjuster.

Karner et al differs from the present invention in that Karner et al does not teach that the exhaust mechanism is at the side of the plasma region partitioned by the conductance adjuster, or that process gas is supplied via the first inlet and an inert gas is supplied at the second inlet.

Sumitomo teaches a plasma reactor that includes an exhaust mechanism 5, 5a on the side of the plasma region 1 partitioned by the conductance adjuster 1b (figure 1).

The motivation for moving the exhaust mechanism of Karner et al to the plasma region partitioned by the conductance adjuster is to better control the pressure in the plasma region to improve the concentration of the plasma ions and to improve the processing speed as taught by Sumitomo (paragraphs 0006, 0007).

Art Unit: 1763

The motivation for supplying a specific gas to the specific inlet is to provide the desired gas to the desired location.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to move the exhaust mechanism of Karner et al to the plasma region partitioned by the conductance adjuster as taught by Sumitomo, and to supply the desired gas to the first and second gas inlets.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 2006/0081183 A1 ('183) in view of Karner et al, US Patent 5,616,373.

Art Unit: 1763

'183 teaches: a process chamber; a gas introduction part arranged closer to the object than a plasma generating region; an exhaust mechanism arranged closer to the plasma region (claim 1); a conductance adjuster with holes (claims 2 and 3); the exhaust mechanism located on the side of the plasma region partitioned by the conductance adjuster (claim 4); and a first and second gas inlet (claim 5).

'183 differs from the present invention in that it does not teach that the object is between the gas introducing part and the plasma generating region in the flow of the gas.

Karner et al was discussed above and includes an object 4 located between the gas introducing part 15 and a plasma generating region 23c in the flow of the gas.

The motivation for placing the object in the flow of the processing gas is to expose the surface of the object to the process gases to process the object.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the object of '183 in the flow of the gas as taught by Karner et al.

This is a provisional obviousness-type double patenting rejection.

Conclusion

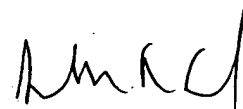
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone

Art Unit: 1763

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
5/2/06